

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE	PAGE 1 OF 8 PAGES
2. AMENDMENT/MODIFICATION NO. 01	3. EFFECTIVE DATE 15 October 2003	4. REQUISITION/PURCHASE REQ. NO. 32301876	5. PROJECT NO. (If applicable)	
6. ISSUED BY CONTRACTING OFFICER, CODE 1163WS, BLDG. 3330N NAVSURFWARCENDIV 300 HIGHWAY 361, CRANE, IN 47522-5001		7. ADMINISTERED BY (If other than Item 6)	CODE	
8. NAME AND ADDRESS OF CONTRACTOR (No. Street, county, State and ZIP: Code)			<input checked="" type="checkbox"/>	9A. AMENDMENT OF SOLICITATION NO. N00164-03-R-8217
				9B. DATED (SEE ITEM 11) 07 October 2003
				10A. MODIFICATION OF CONTRACT/ORDER NO.
				10B. DATED (SEE ITEM 13)
CODE		FACILITY CODE		

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☒ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning one (1) copy of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATA SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and data specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

<input checked="" type="checkbox"/>	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not, ☐ is required to sign this document and return ___ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

See pages 2 through 8 of 8.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) D.S. Davis, Contracting Officer	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY (Signature of Contracting Officer)	16C. DATE SIGNED

1. This amendment is being issued to change the requirement quantity from 6 (six) to 10 (ten) Prototype ALQ-99 Band 4 Transmitter Output Traveling Wave Tube. As a result of the requirement change a revision of Sections B, C, and F is required.

2. Replace Section B with the following:

SECTION B – SCHEDULE OF SUPPLIES/SERVICES

ITEM	SUPPLIES/SERVICES	QTY	UNIT	U/PRICE	TOTAL
0001	Prototype ALQ-99 Band 4 Transmitter Output Traveling Wave Tube Improvement in accordance with NSWC Crane Statement of Work in Section C. REQ: ACRN:	10	EA		
0002	Data, in accordance with the Contract Data Requirements List (CDRL), in Exhibit A.	1	LO	NSP	NSP

3. Replace Section C, Statement of Work **ONLY** with the following:

SECTION C - DESCRIPTION (S)/SPECIFICATION (S)/STATEMENT OF WORK

**STATEMENT OF WORK TYPE IV FOR THE
AN/ALQ-99(V) BAND 4, TRAVELING WAVE AMPLIFIER P/N 373081-1**

1.0 SCOPE

This Statement of Work (SOW) in conjunction with the attached Raytheon specification 373081-1, establishes the performance, testing, manufacturing, and acceptance requirements of AN/ALQ-99(V) Band 4, Traveling Wave Amplifier P/N 373081-1. The Contractor shall design, develop, document, fabricate, test, evaluate, and deliver ten (10) each AN/ALQ-99(V) Band 4 Electron Tube, Traveling Wave Amplifier P/N 373081-1. The ten (10) delivered prototype TWT configuration shall be as 10documented and approved during the Preliminary Design Review (PDR) and Critical Design Review (CDR).

1.1 ELECTRON TUBE, TRAVELING WAVE AMPLIFIER P/N 373081-1 DESIGNATION

AN/ALQ-99 (V) Band 4 Electron Tube, Traveling Wave Amplifier P/N 373081-1

2.0 APPLICABLE DOCUMENTS

The following documents, of the exact issue cited below, form part of the SOW or specification to the extent specified herein. In the SOW or specification text, exact issue is not cited for convenience or reference.

2.1 DETAIL DESIGN SPECIFICATION/DRAWINGS

373081-1Drawing, Electron Tube, TRAVELING WAVE AMPLIFIER

2.2 MILITARY SPECIFICATIONS AND STANDARDS

MIL-STD-130K Marking, Identification (15 JAN 2000)

MIL-STD-704E Aircraft Power, Utilization of (01 MAY 1991)

MIL-STD-810F Aerospace and Ground Equipment, Environmental Test Methods for (05 MAY 2003)

MIL-STD-202G Elek and Elec Component Parts, Test Methods for (08 FEB 2002)

MIL-STD-1311C Electron Tubes, Test Methods for (31 JAN 2001)

MIL-STD-1521B Military Standard (USAF) Technical Reviews and Audits for Systems, Equipment, and Computer

Software

(04 JUN 85)

MIL-HBK-5400 Electronic Equipment, Airborne, General Guidelines for (30 NOV 1995)

MIL-N-18307G (2) Nomenclature and Identification for Electronic, Aeronautical, and Aeronautical Support Equipment

(13 SEP 86)

MIL-T-31000B (2) Technical Data Packages, General Specification for (14 DEC 2001)

MIL-STD-882D (1) System Safety Program Requirements (10 FEB 2000)

MIL-STD-1472F (3) Human Engineering Design Criteria for Military Systems, Equipment and Facilities (23 AUG 1999)

MIL-HDBK-350 A Guide For MIL-HDBK-350 Corrective Action And Disposition System For Nonconforming Material (7 June 1991)

SECNAV 5200.39 (ANS(RD&A)(ABM 0579LD0575180) Participation On The Government-Industry Data Exchange Program (GIDEP) (22 JUN 1995)

ISO-10012-1 Rev 03 Measurement Management Systems, Requirements for Measurement Processes and Measuring Equipment (15 April 2003)

3.0 REQUIREMENTS (DI-A-3027A)

The contractor shall design, develop, fabricate and test modifications to the AN/ALQ-99(V) Band 4 Electron Tube, Traveling Wave Amplifier P/N 373081-1 to improve the existing AN/ALQ-99(V) Band 4 Electron Tube, Traveling Wave Amplifier producibility in accordance with Raytheon Specification 373081-1. After modification the AN/ALQ-99(V) Band 4 Electron Tube, Traveling Wave Amplifier will be referred to as the AN/ALQ-99(V) Band 4 Electron Tube, Traveling Wave Amplifier, P/N: 373081-1.

For clarification purposes, the existing AN/ALQ-99(V) Band 4 Electron Tube, Traveling Wave Amplifier shall be designated as "Present Band 4 OTWT" and the modified AN/ALQ-99(V) Band 4 Electron Tube, Traveling Wave Amplifier shall be known as "Prototype Band 4 OTWT" for the remainder of this SOW.

The contractor shall perform the following:

1. Modeling of the Present Band 4 OTWT design, using commercial and government-developed 3-dimensional electromagnetic computer modeling and simulation codes
2. Development of Prototype Band 4 OTWT design improvements, using aforementioned computer codes
3. Fabrication of Band 4 OTWT prototypes that incorporate design improvements
4. Testing and delivery of Band 4 OTWT prototypes that demonstrate improvements
5. Product drawings of the final configuration of the Prototype Band 4 OTWT design, including any critical assembly processes
6. Participation in government-conducted qualification testing of Band 4 OTWT prototypes
7. Conduct of Preliminary and Critical Design Reviews (PDR/CDR).
8. Provide Program management Contract data deliverables

3.1 CONTRACTOR PROGRAM MANAGEMENT (DI-MGMT-80227, DI-MGMT-80269)

The contractor shall establish and maintain a management organization with a program manager and appropriate staff to cover administration, engineering, integrated logistic support, configuration management, and testing. The contractor shall plan and monitor the work for compliance with contract schedule requirements and specifications. The contractor is responsible for reporting all critical points in the design, documentation, testing, and manufacturing areas.

3.1.1 PROGRAM ADMINISTRATION (DI-MGMT-80227)

The contractor shall assign qualified personnel to monitor and review performance and schedule attainment on the Prototype Band 4 OTWT program. Program milestones and technical reports of engineering status shall be reported to the Government. The contractor shall submit the milestones and engineering status in accordance with CDRL A016 – Contractors Progress, Status and Management Report.

3.1.2 PROGRAM REVIEWS

The contractor shall hold program reviews, design reviews, and technical reviews as specified herein. Reviews shall be scheduled based on the availability of the necessary information and contract articles (e.g., hardware data, trade off studies, test results, etc.).

3.1.2.1 REVIEW CONDUCT

The procuring activity and the contractor shall establish co-chairpersons for the PDR and CDR reviews, which will be held at the contractor's facility. The contractor will schedule these reviews. Excluding the Post Award Conference, the contractor will notify the Government no later than 30 days prior to the reviews. The contractor may have a representative from any/all subcontractors designing, developing, fabricating, documenting, or testing a contracted deliverable. The contractor shall ensure that for each agenda item there is at least one individual from the contractor's organization present who is directly responsible for that effort.

3.1.2.2 POST AWARD CONFERENCE (DI-A-7088, DI-A-7089)

This review shall be held 15 to 45 days after contract award. The purpose is to review all contract documentation, to assure precise understanding of all contract requirements and to review detailed progress on contractor implementation.

3.1.2.3 PRELIMINARY DESIGN REVIEW (PDR). (Phase 1) (DI-ADMN-81373, DI-A-7089)

This review shall be conducted at the contractor's facility to review all technical aspects of the proposed design modifications (improvements), with emphasis on performance, producibility, maintainability, reliability predictions, and schedule adherence. The initial review shall be scheduled and conducted no later than 180 days after contract award. The contractor shall submit the PDR Agenda to the Government no later than 30 days prior to scheduled PDR. The list below contains mandatory items for discussion during the PDR. Either the contractor or the Government may add other items.

a. Program schedule

- 1) Results of Modeling of the Present Band 4 OTWT design, using commercial and Government-developed 3-dimensional electromagnetic computer modeling and simulation codes
- 2) Development of Prototype Band 4 OTWT design improvements, using aforementioned computer codes
- 3) Fabrication of Prototype Band 4 OTWT prototypes that incorporate design improvements. Testing and delivery of Prototype Band 4 OTWT units that demonstrate improvements
- 4) Associated data shall be provided in accordance with the applicable Contract Data Requirements list (CDRL), DD Form 1423.

b. Design approach including preliminary outline drawings, sketches, and construction concepts

c. Configuration Management Program status brief

d. Description of trade-off parameters and trade-off rationale

e. Performance prediction analysis

f. Description of interface characteristics

g. Review of materials

- j. Government Furnished Equipment (GFE) status
- k. Tooling requirements
- l. Status of quality assurance program
- m. Producibility
- n. Safety Program

3.1.2.4 ACCEPTANCE TESTS: PROTOTYPE BAND 4 OTWT TEST REQUIREMENTS (DI-A-7088, DI-A-7089)
(UDI-T-23937, DI-NDTI-80809A)

The contractor shall host at their facility a Prototype Band 4 OTWT Test Results Review no later than 45 days after the completion of acceptance testing for the Prototype Band 4 OTWTs. Mandatory items of discussion shall be the results or testing and the results of failure analysis if any. The contractor or the Government may add additional agenda items.

The contractor shall perform acceptance tests on 10 (ten) Prototype Band 4 OTWTs in accordance with Raytheon Specification # 373081-1 and NSWC Crane ATP802019035800 Rev B DATED 8/94.

3.1.2.5 CRITICAL DESIGN REVIEW (CDR) (Phase 2) (DI-ADMN-81373, DI-A-7089)

Phase 2 – The contractor shall not begin the CDR tasking (Phase 2) until the PDR (Phase 1) has been approved by the Government. The contractor shall submit the CDR Agenda to the Government (NSWC Crane, IN) no later than 30 days prior to scheduled CDR. The contractor shall perform testing of the Prototype Band 4 OTWTs in accordance with NSWC Crane ATP802019035800 Rev B DATED 8/94 and submit test results to the Government (NSWC Crane, IN) with the Prototype Band 4 OTWT units no later than 60 days prior to the CDR for Government review.

This review shall be conducted at the contractor's facility to review all aspects of the proposed design with emphasis on results of testing performed on Prototype Band 4 OTWT construction samples. The Government shall review the detail design drawings and associated documentation to ensure that 373081-1 specification requirements have been met. The review shall be scheduled and conducted no later than 420 days after Government approval of PDR report/minutes. The list below contains mandatory items for discussion during the CDR. Other items may be added for the reviews by either the contractor or the Government.

The contractor shall submit complete technical data packages and ten (10) engineering proof-of-concept prototypes at the scheduled CDR.

- a. Schedule
- b. Prototype Band 4 OTWT Design status
- c. Detailed Prototype Band 4 OTWT drawings, material specification, and Prototype Band 4 OTWT construction
- d. Detailed hardware design of production tooling items
- e. Detailed equipment performance analyses
- f. Construction sample test results
- g. In-depth analysis of failures documented in Band 4 OTWT Prototype testing.
- h. Service life analyses
- i. Updated description of interface characteristics and design
- j. Government Furnished Equipment (GFE) status

- k. Status of quality assurance program
- l. Configuration Management program status
- m. Producibility
- n. Safety Program

3.1.2.6 FUNCTIONAL CONFIGURATION AUDITS (FCA) (DI-A-7088, DI-A-7089, DI-CMAN-81022)

A Functional Configuration Audit shall be held in conjunction with the PDR. The purpose of the FCA is to validate that the development effort has achieved the performance and functional characteristics required by the specification.

3.1.2.7 PHYSICAL CONFIGURATION AUDITS (PCA) (DI-A-7088, DI-A-7089, DI-CMAN-81022)

A Physical Configuration Audit shall be conducted on the Prototype Band 4 OTWTs and held in conjunction with the CDR. The purpose of the PCA is to validate the drawing packages' accurate representation of the Prototype Band 4 OTWT manufactured.

3.2 CONFIGURATION AUDITS

The FCA will be performed in accordance with MIL-STD-1521B and paragraph 3.1.2.6 of this SOW. The PCA shall be performed in accordance with MIL-STD-1521B and paragraph 3.1.2.7 of this SOW.

3.3 DRAWINGS AND ASSOCIATED LISTS

The contractor shall develop the following drawings and associated lists in accordance with MIL-T-31000B.

3.3.1 PRODUCT DRAWINGS AND ASSOCIATED LISTS (DI-DRPR-81000)

The contractor shall develop Product Drawings of the Prototype Band 4 OTWT that clearly delineate its physical characteristics, parts, and materials. Master Drawing custody and drawing maintenance responsibility including all data rights shall transfer to the Government at the completion of the contract.

3.3.2 SPECIAL INSPECTION EQUIPMENT DRAWINGS AND ASSOCIATED LIST (DI-DRPR-81004)

The contractor shall develop Special Inspection Equipment (SIE) Drawings that clearly delineate the design of all contractor-developed SIE to be used during acceptance testing of the Prototype Band 4 OTWT.

3.3.3 SPECIAL TOOLING DRAWINGS AND ASSOCIATED LISTS (DI-DRPR-81008)

The contractor shall develop Special Tooling Drawings that clearly delineate the design of all contractor-developed tooling to be used in the manufacture of the Prototype Band 4 OTWT.

3.3.4 SPECIAL INSPECTION EQUIPMENT CALIBRATION PROCEDURES (DI-QCIC-81007)

The contractor shall develop calibration procedures to describe the procedures and requirements for calibrating SIE. Refer to paragraph 3.7 for SIE calibration requirements.

3.4 QUALITY ASSURANCE PROGRAM

The contractor shall develop, implement and maintain a Prototype Band 4 OTWT Quality Assurance Program in accordance with the requirements of ISO 9000 – Best Commercial Practice and MIL-I-45208A. The contractor shall maintain a corrective action program in accordance with MIL-HDBK-350.

3.5 RECORDS AND REPORTS

The contractor internal records and reports such as engineering log books, data, reports, design review results etc. shall be maintained in the contractor's format and made available for the Procuring Activity's review upon request.

3.6 SYSTEM SAFETY PROGRAM (DI-ADMN-81373)

The contractor shall conduct a System Safety Program in accordance with MIL-STD-882D as follows:

a. Task 100 - System Safety Program

(1) (Para. 4.2b) Ensure that hazards associated with the AN/ALQ-99(V) Band 4 Electron Tube, Traveling Wave Amplifier are identified, evaluated, and resolved (eliminated or the associated risk reduced to a level acceptable to the Procuring Activity). Risks shall be described in accordance with paragraph 4.5 of MIL-STD-882B.

(2) Appendix B, Para. 60.1.4; (a) Review preliminary engineering designs to ensure safety design requirements are incorporated and identified hazards are resolved. (b) Participate in technical design and program reviews. (c) Identify and evaluate the effects of storage, handling, test, operation and maintenance on the safety of the AN/ALQ-99(V) Band 4 Electron Tube, Traveling Wave Amplifier and its components. (d) Evaluate results of failure analysis and mishap investigations.

(3) (Para. 4.5) Category I (catastrophic) hazards-probability levels A through D and Category II (critical) hazards-probability levels A through C shall be resolved (eliminated or controlled to an acceptable level of risk).

b. Task 201 - Preliminary Hazards List (PHL)

(1) The contractor shall examine the AN/ALQ-99(V) Band 4 Electron Tube, Traveling Wave Amplifier design concept shortly after concept definition and identify possible hazards that may be inherent in the design. The Contractor shall further investigate those hazards selected by the Procuring Activity to determine their significance.

c. Task 209 - Safety Assessment

(1) The contractor shall summarize the results of the safety program efforts. Those hazards identified in Task 201, along with specific safety recommendations or the precautions required to ensure safety of personnel and property, shall be included. The list of hazards shall be categorized as to whether or not they may be expected under normal or abnormal operating conditions.

d. AN/ALQ-99(V) Band 4 Electron Tube, Traveling Wave Amplifier Safety Requirements

(1) The contractor shall ensure that the AN/ALQ-99(V) Band 4 Electron Tube, Traveling Wave Amplifier also meets the requirements of paragraph 5.13 of MIL-STD-1472.

3.7 SPECIAL INSPECTION EQUIPMENT CALIBRATION

The contractor shall establish and maintain a system for the calibration of all Contractor Special Inspection tooling in accordance with ISO-10012-1 Rev 03. All special inspection tooling shall be calibrated within 30 days prior to Prototype Band 4 OTWT Testing and semi-annually thereafter.

3.8 GOVERNMENT FURNISHED EQUIPMENT (GFE) REPORT (DI-MISC-80508A)

The contractor shall monitor, track and submit status of all Government Furnished Equipment (GFE).

3. Replace Section F, Time of Delivery, FAR 52.211-8 **ONLY** with the following:

SECTION F - DELIVERIES OR PERFORMANCE

CLAUSES IN FULL TEXT

TIME OF DELIVERY (FAR 52.211-8) (JUNE 1997)

(a) The Government requires delivery to be made according to the following schedule:

REQUIRED DELIVERY SCHEDULE

ITEM NO	QUANTITY	WITHIN DAYS AFTER DATE OF CONTRACT
<u>0001</u>	<u>10 Each</u>	<u>20 months after contract</u>
<u>award</u>		
<u>0002</u>	<u>01 Lot</u>	<u>As required. See</u>
<u>DD1423s</u>		

The Government will evaluate equally, as regards time of delivery, offers that propose delivery of each quantity within the applicable delivery period specified above. Offers that propose delivery that will not clearly fall within the applicable required delivery period specified above, will be considered nonresponsive and rejected. The Government reserves the right to award under either the required delivery schedule or the proposed delivery schedule, when an offeror offers an earlier delivery schedule than required above. If the offeror proposes no other delivery schedule, the required delivery schedule above will apply.

OFFEROR'S PROPOSED DELIVERY SCHEDULE

ITEM NO	QUANTITY	WITHIN DAYS AFTER DATE OF CONTRACT
<u>0001</u>	<u>10 Each</u>	
<u>0002</u>	<u>01 Lot</u>	

(b) Attention is directed to the Contract Award provision of the solicitation that provides that a written award or acceptance of offer mailed, or otherwise furnished to the successful offeror, results in a binding contract. The Government will mail or otherwise furnish to the offeror an award or notice of award not later than the day award is dated. Therefore, the offeror should compute the time available for performance beginning with the actual date of award, rather than the date the written notice of award is received from the Contracting Officer through the ordinary mails. However, the Government will evaluate an offer that proposes delivery based on the Contractor's date of receipt of the contract or notice of award by adding

(i) five calendar days for delivery of the award through the ordinary mails, or

(ii) one working day if the solicitation states that the contract or notice of award will be transmitted electronically. (The term "working day" excludes weekends and U.S. Federal holidays.) If, as so computed, the offered delivery date is later than the required delivery date, the offer will be considered nonresponsive and rejected.

5. Except as provided herein, all terms and conditions referenced in **Item 9A and 10A, as heretofore** changed, remains unchanged and in full force and effect.